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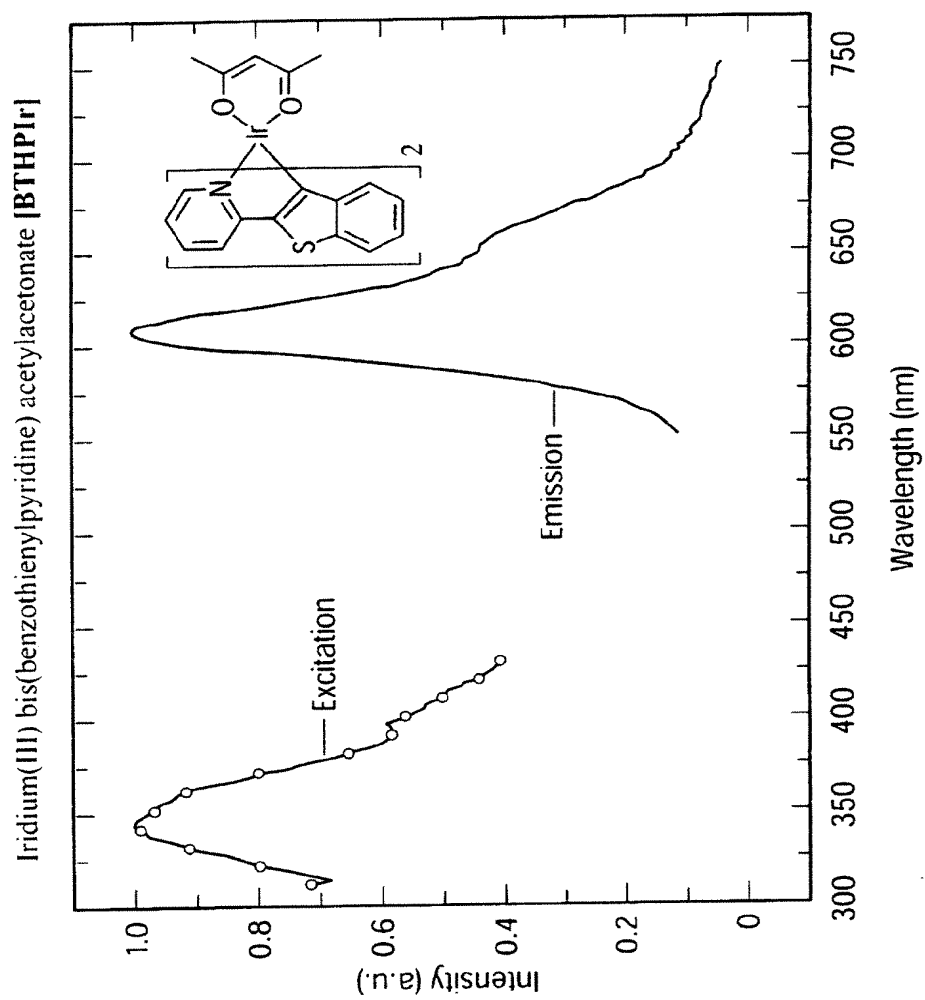


Fig. 21

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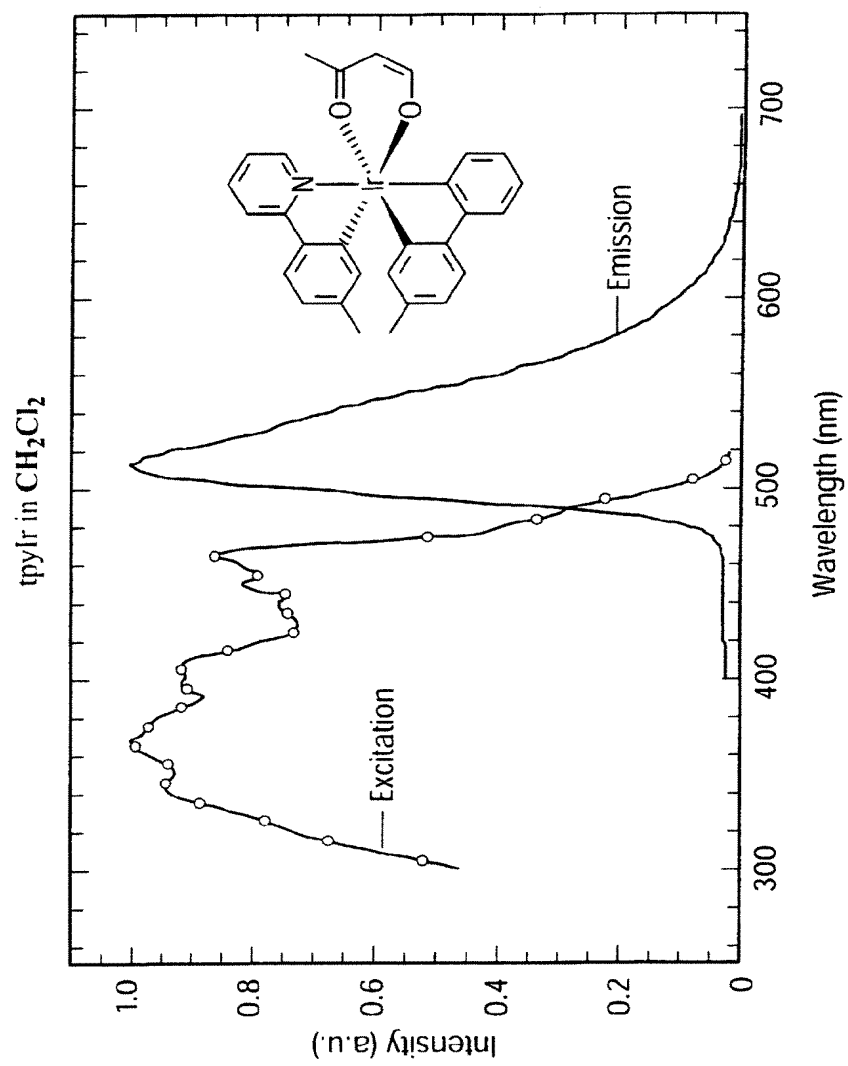
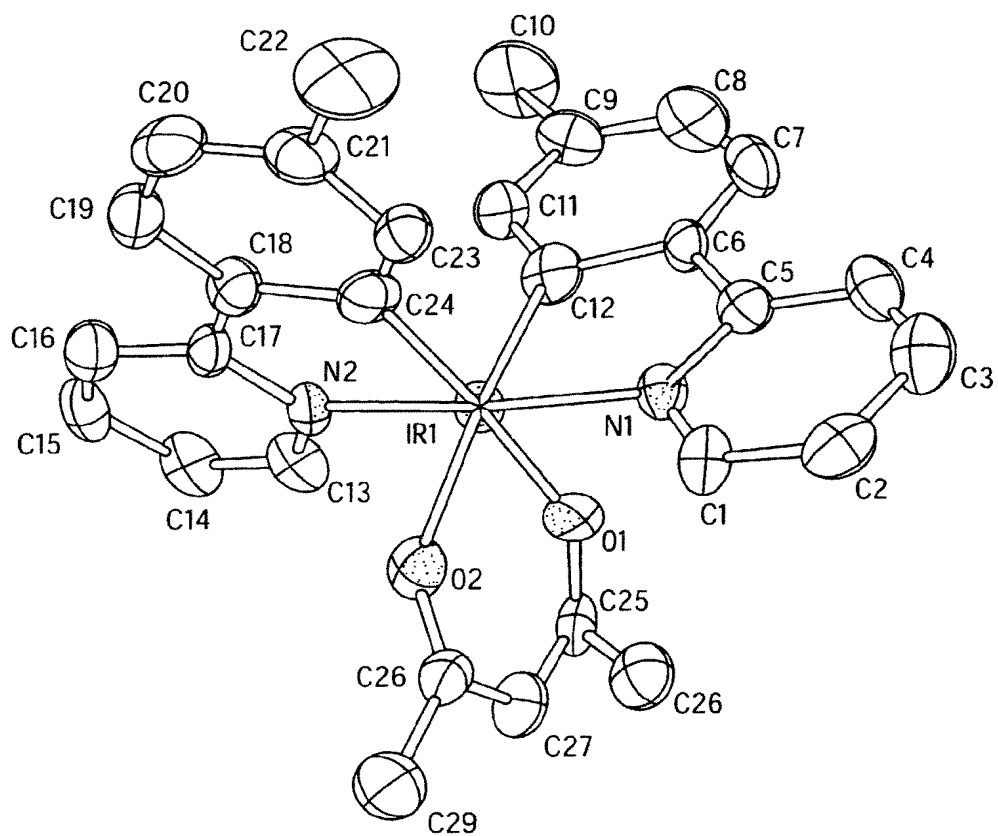


Fig. 22

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Crystal structure of **tpylr***Fig. 23*

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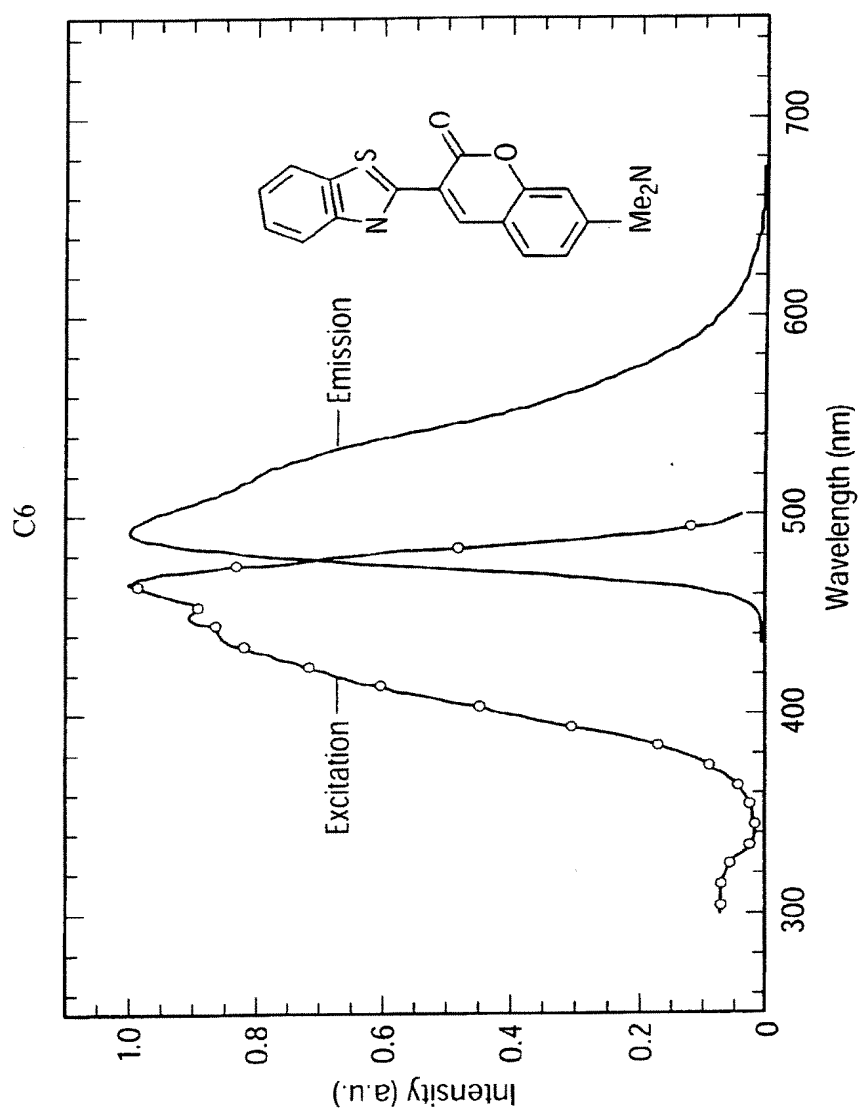


Fig. 24

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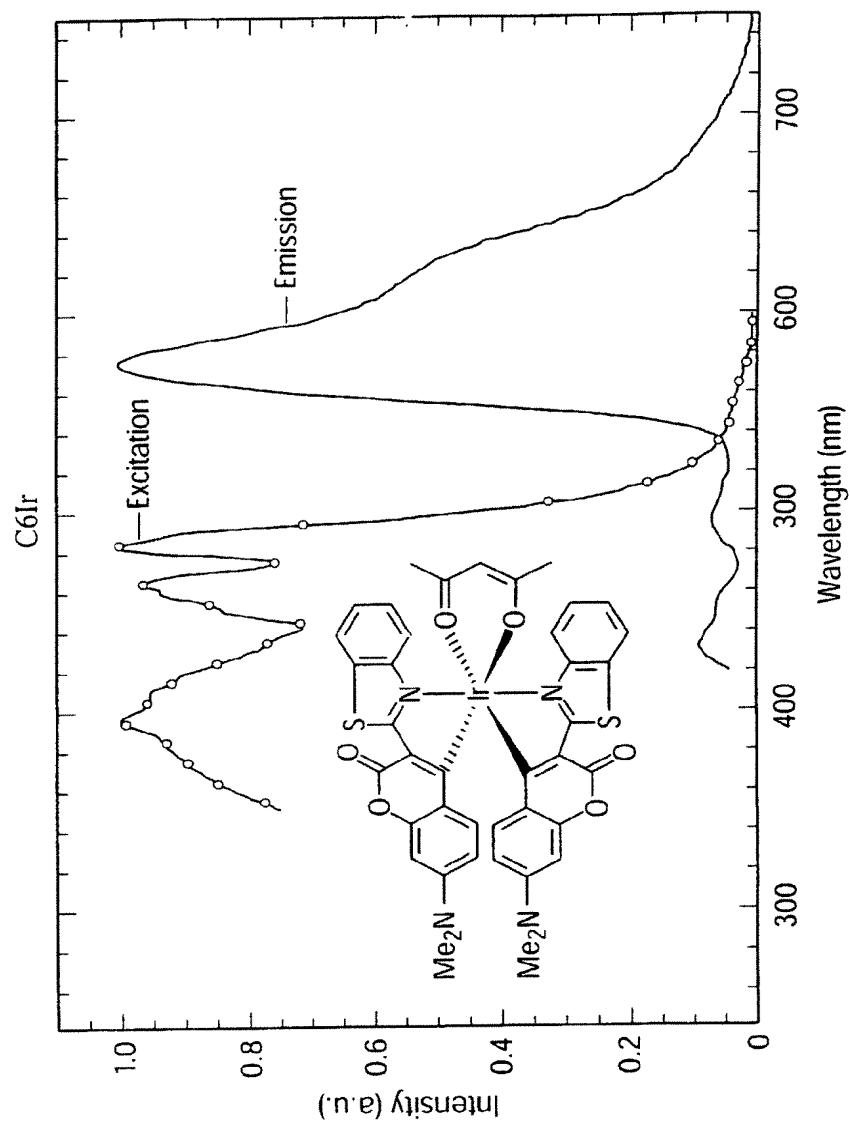


Fig. 25

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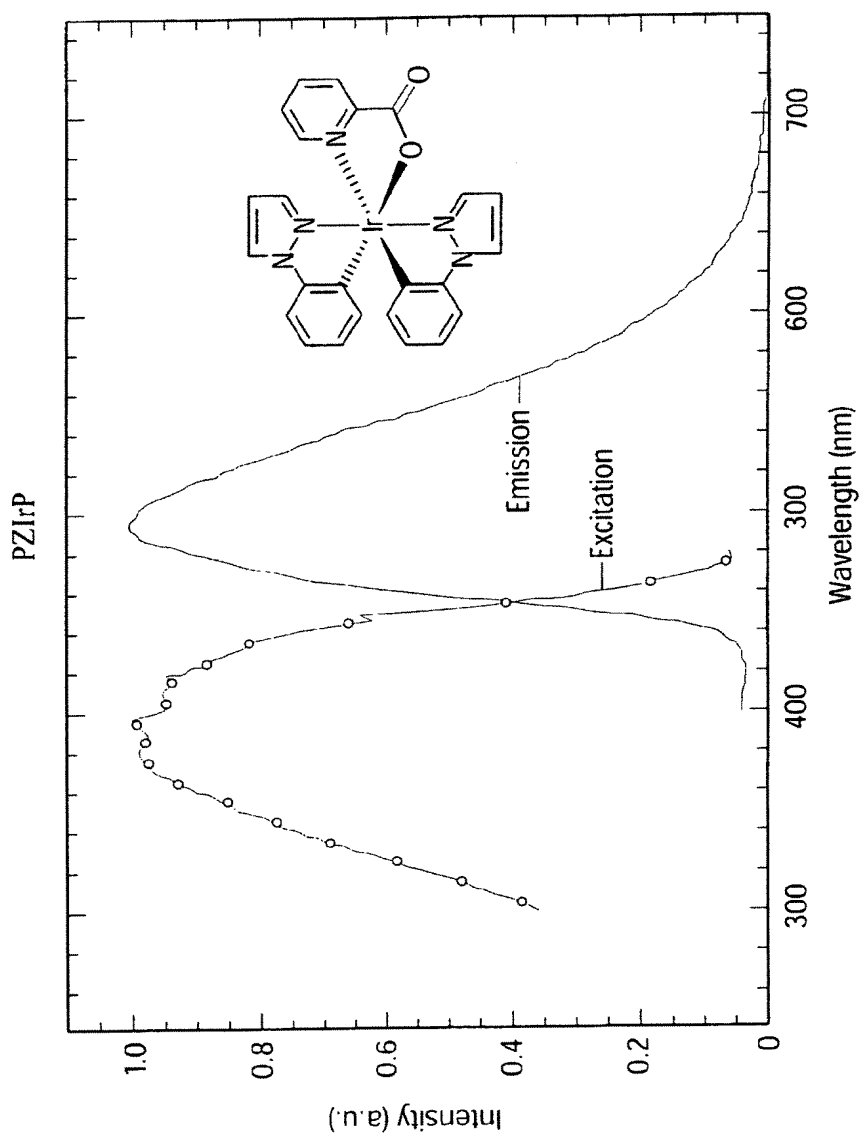


Fig. 26

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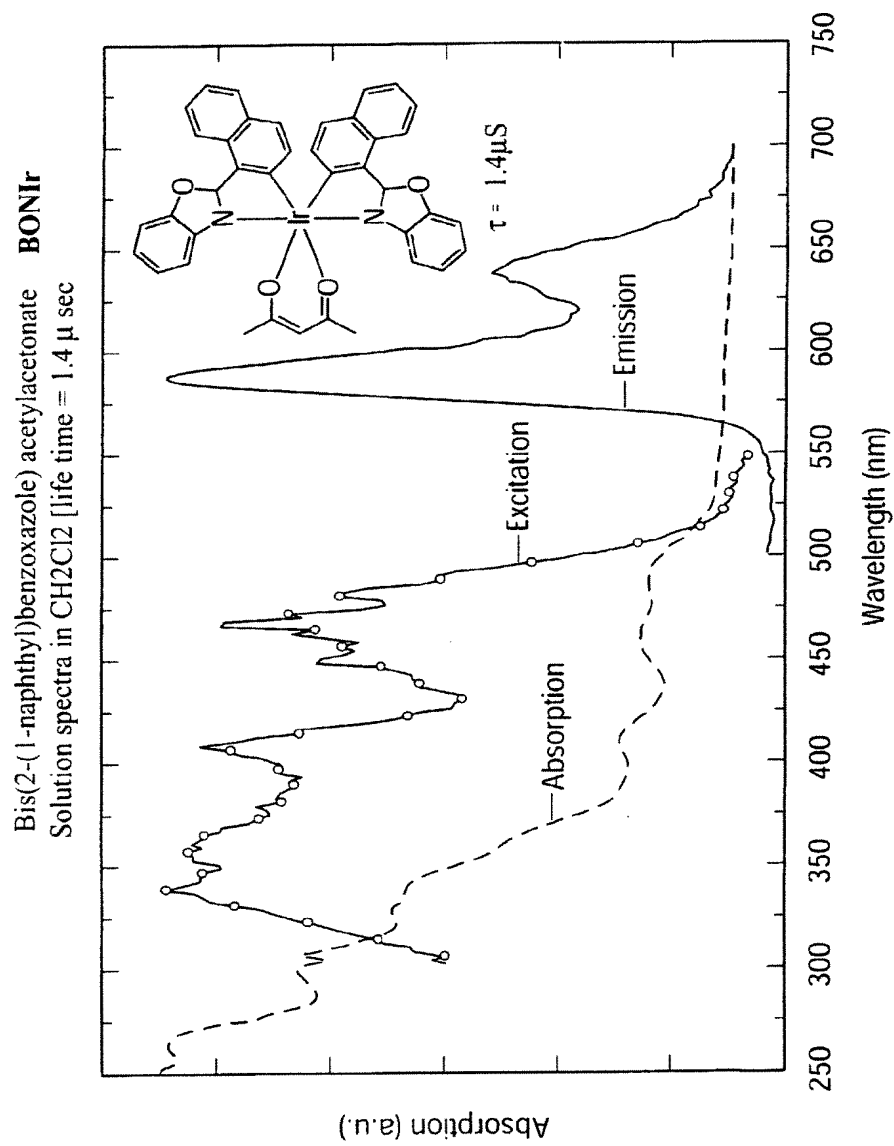


Fig. 27

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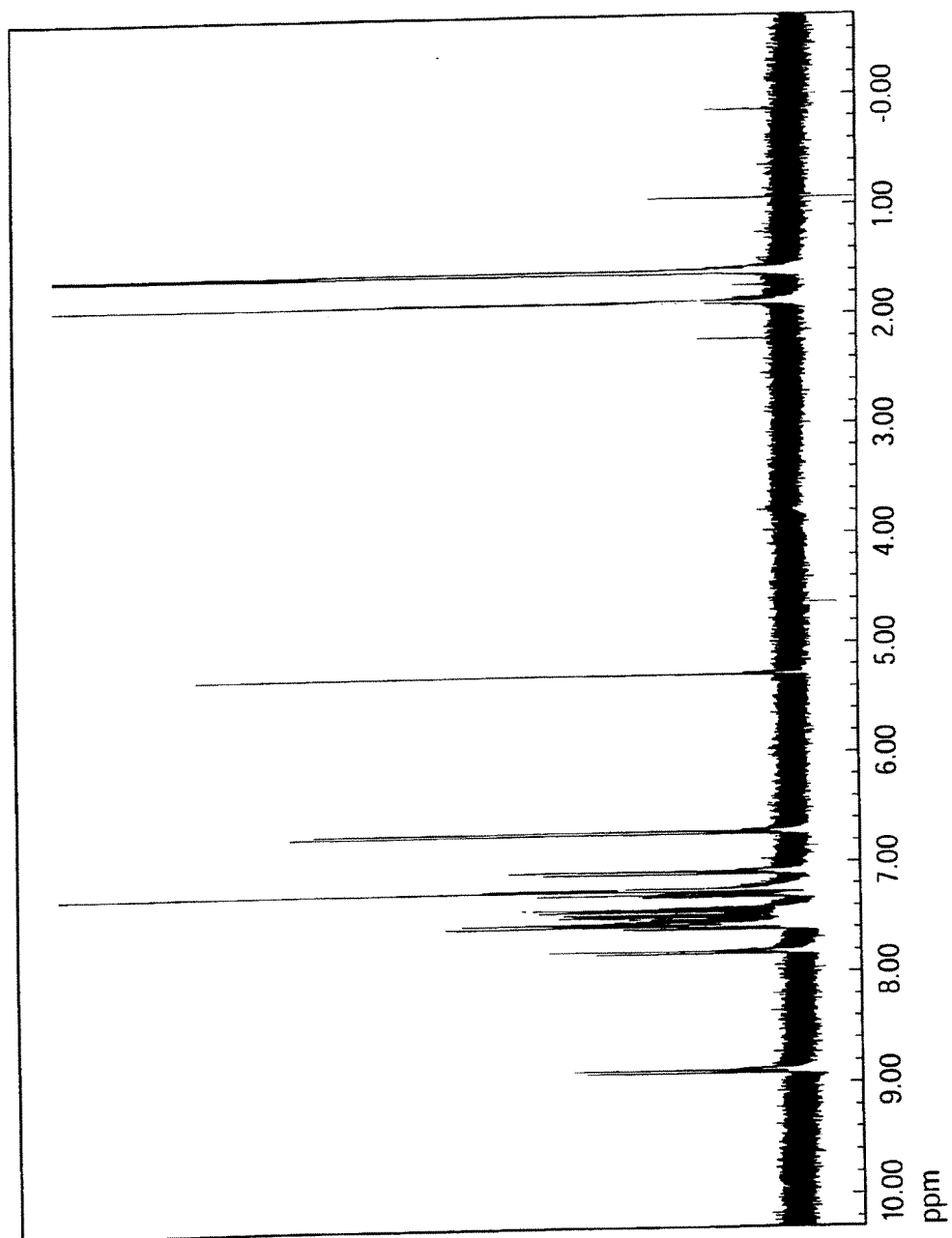


Fig. 28



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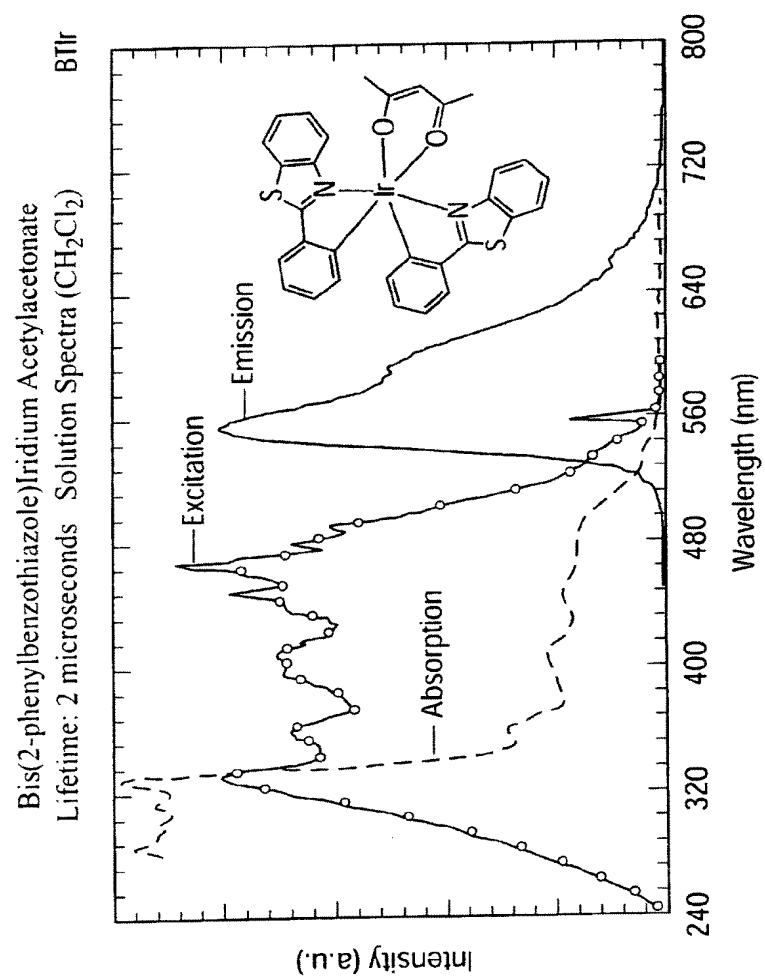


Fig. 29

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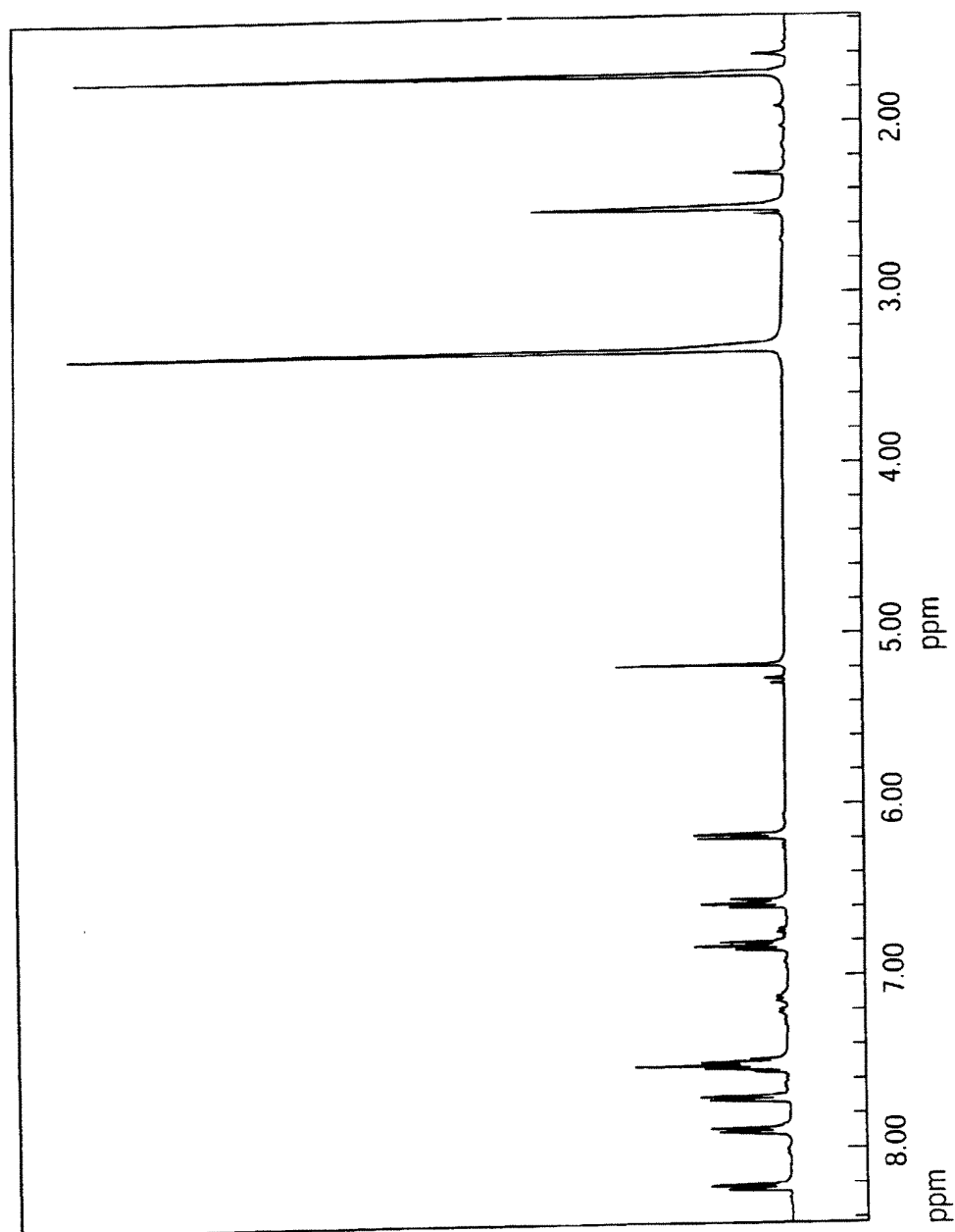


Fig. 30

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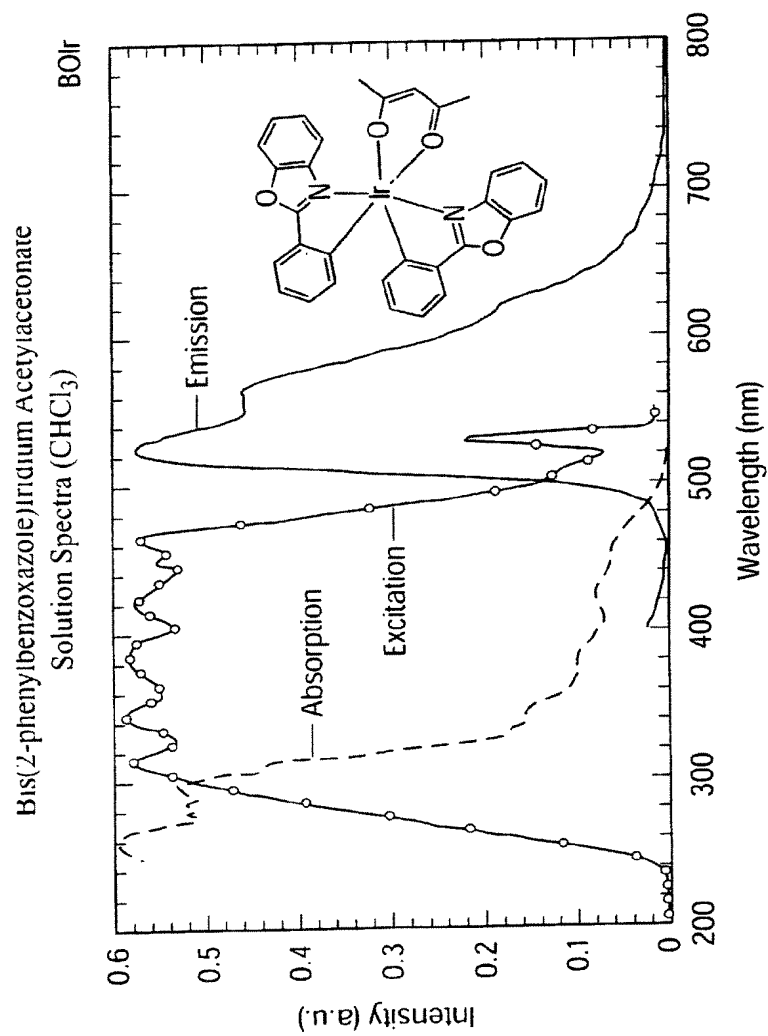
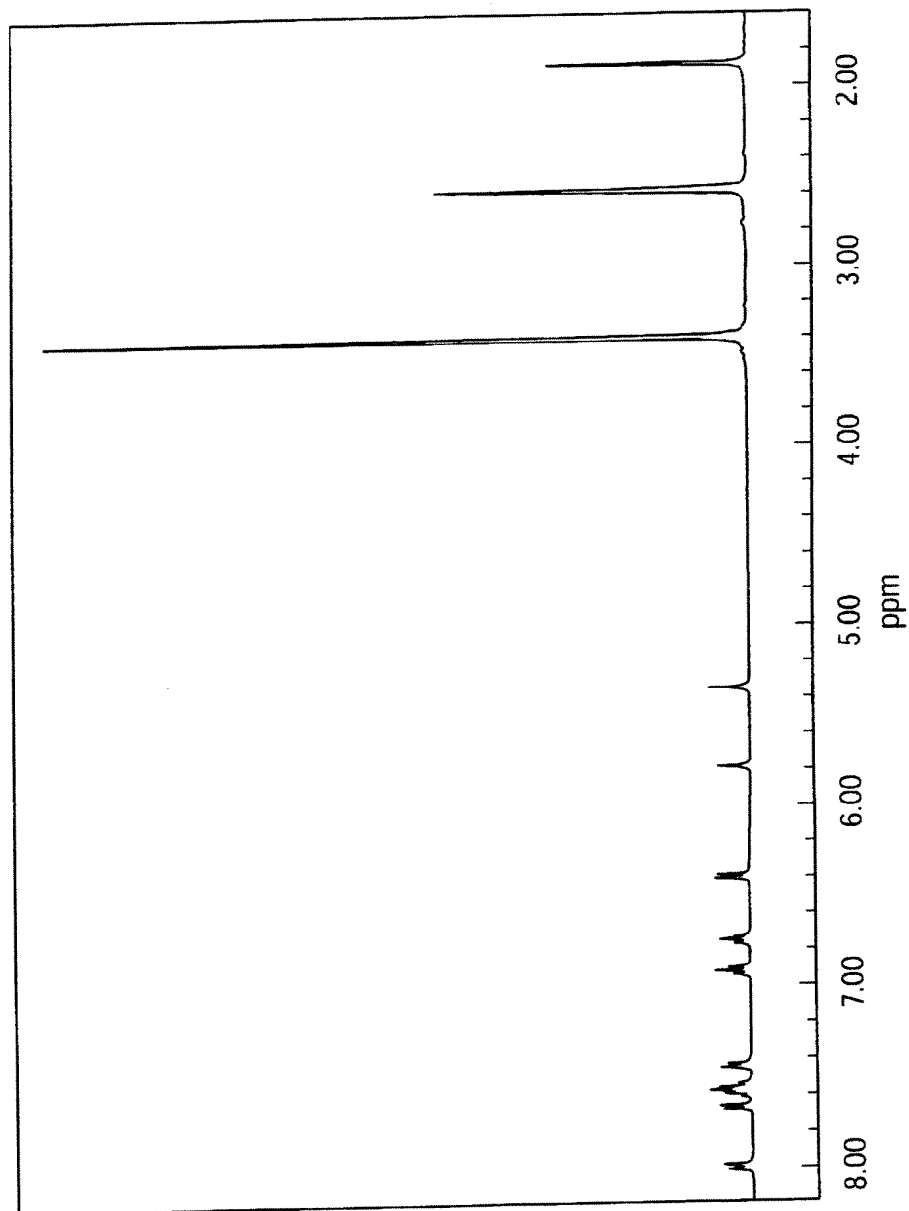


Fig. 31

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ppm  
Fig. 32

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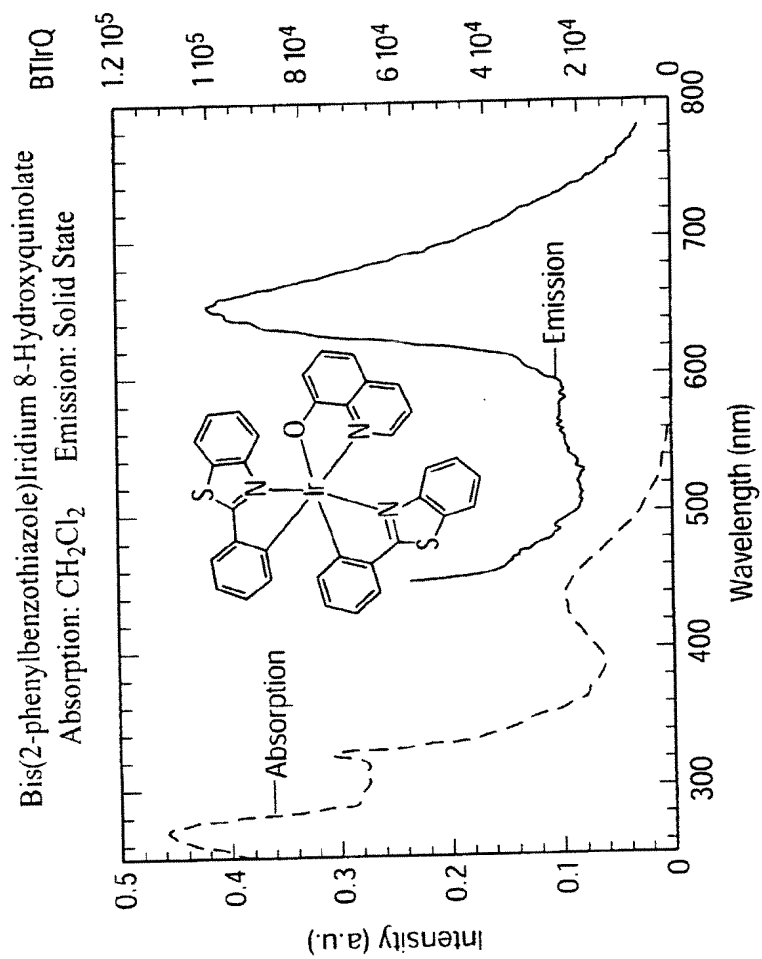


Fig. 33

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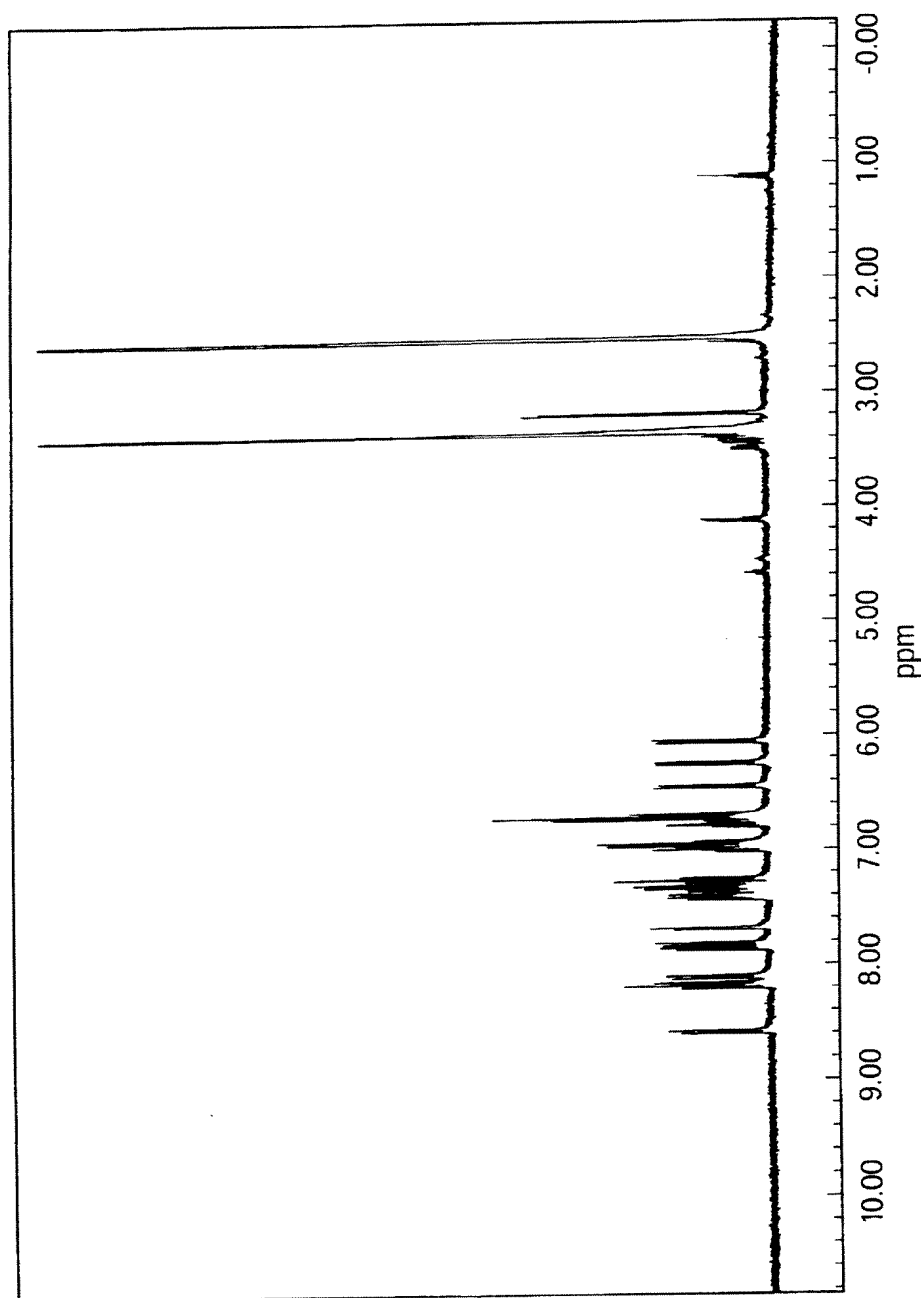


Fig. 34

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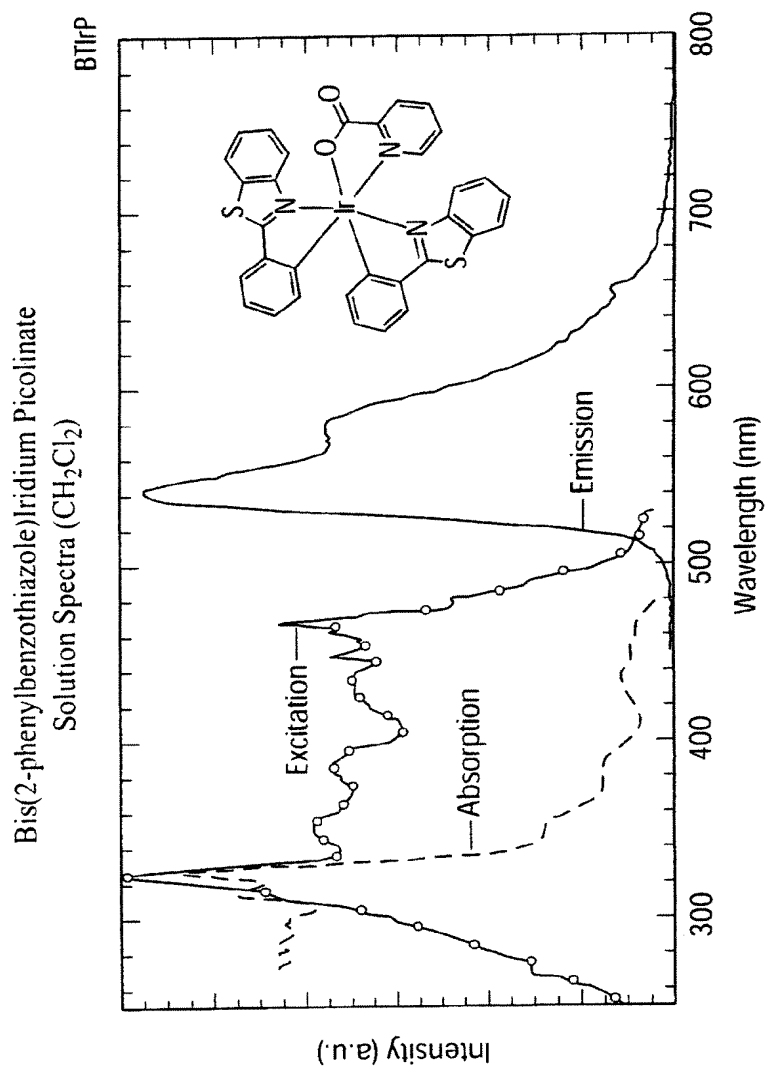


Fig. 35

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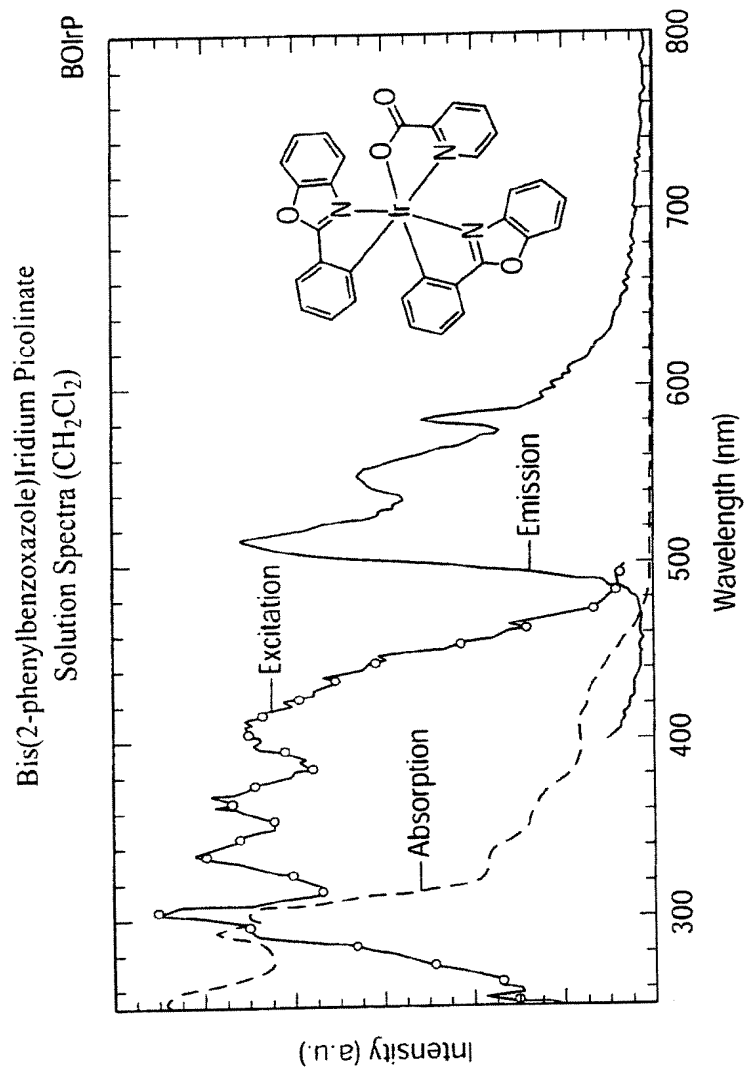


Fig. 36



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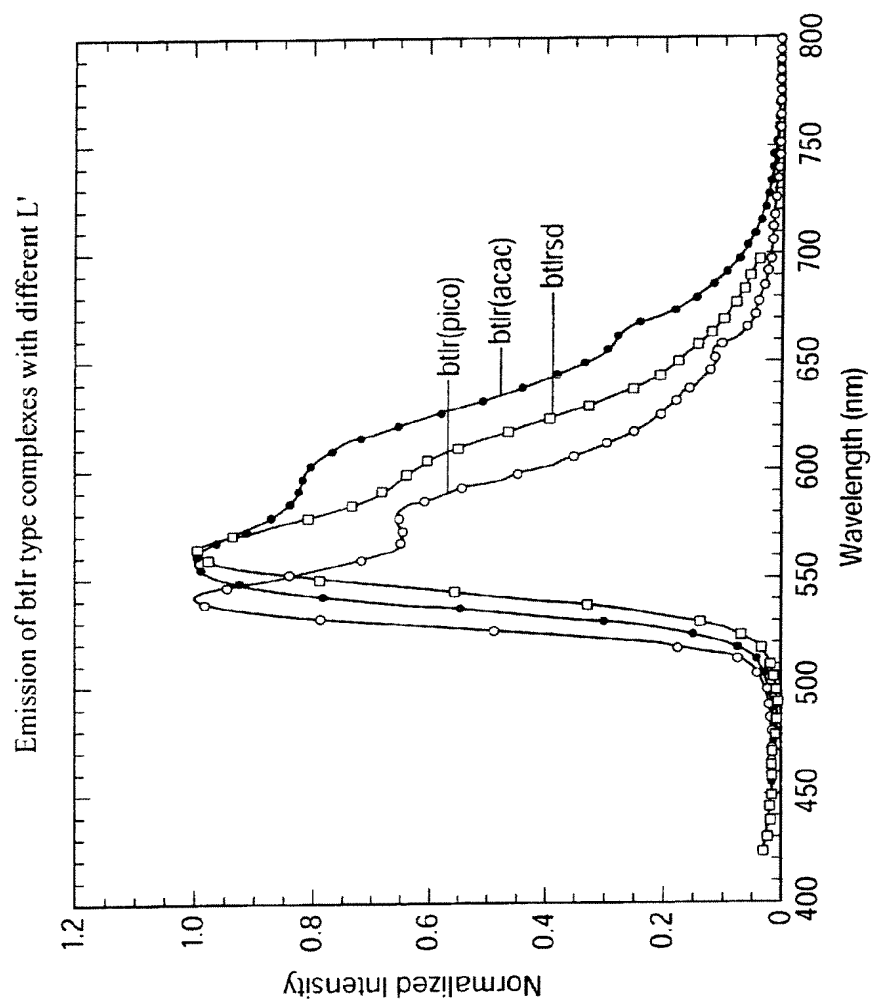


Fig. 37

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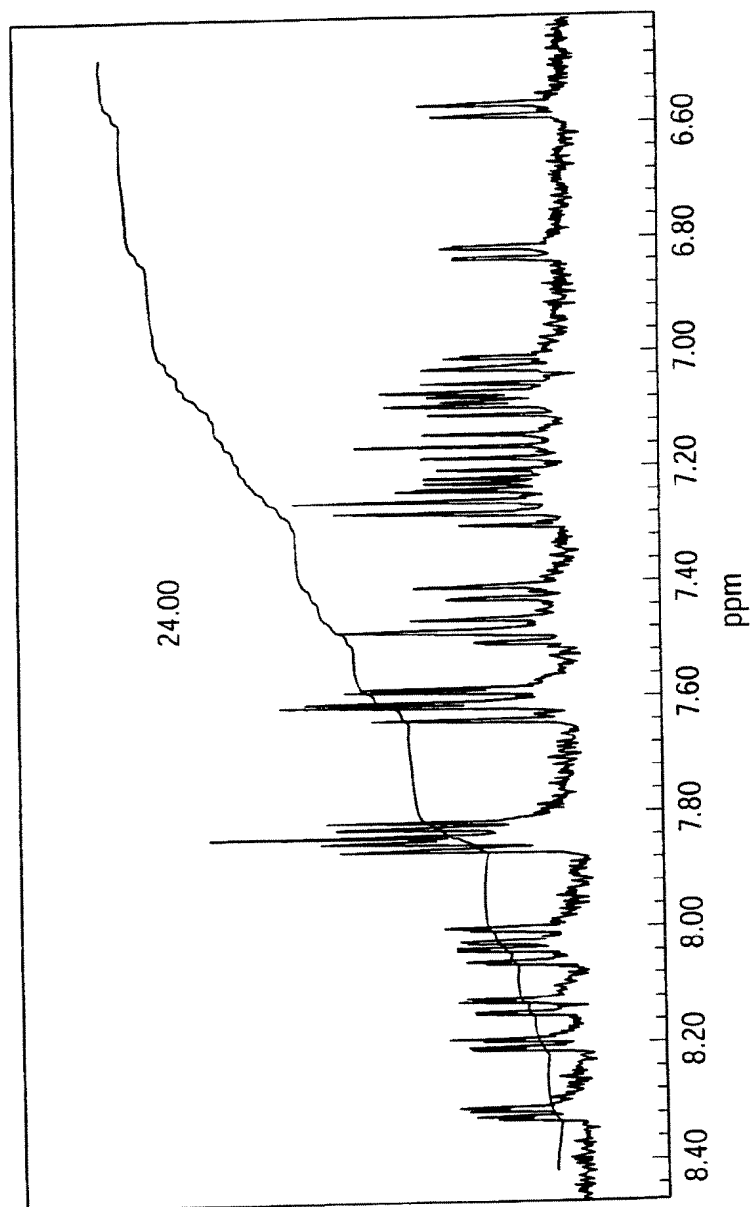
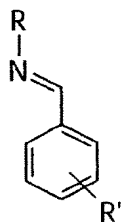
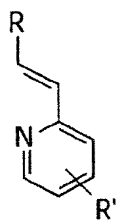


Fig. 38

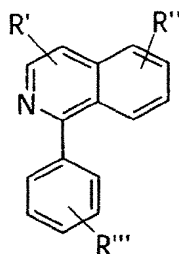
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**other L ligands**

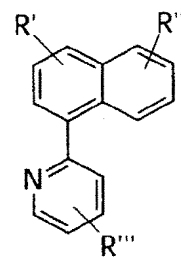
phenylimines



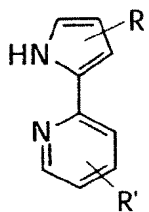
vinylpyridines



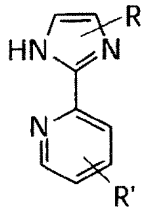
arylquinolines



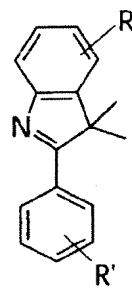
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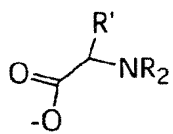
pyridylpyroles



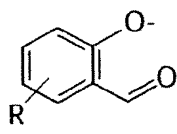
pyridylimidazoles



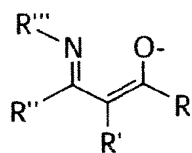
phenylindoles

**other X ligands**

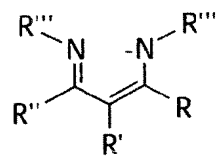
aminoacids



salicylaldehydes

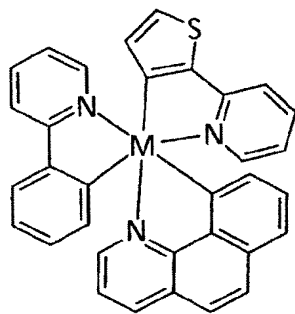
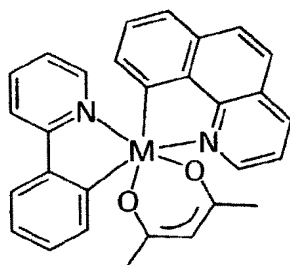
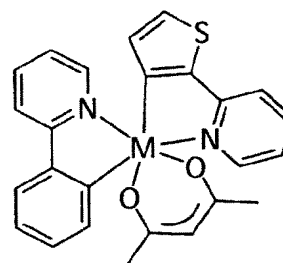
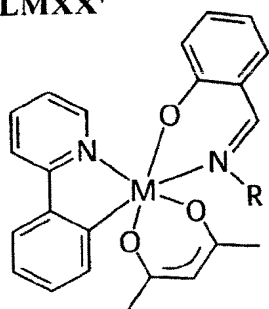


iminoacetonates

*Fig. 39*

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Fig. 40

**LL'L''M** $M(ppy)(bq)(thpy)$ **LL'MX** $M(ppy)(bq)(acac)$  $M(ppy)(thpy)(acac)$ **LMXX'** $M(ppy)(sd)(acac)$

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/32511**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : Please See Extra Sheet.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Extra Sheet.**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	BALDO et al. Very high-efficiency green organic light-emitting devices based on electrophosphorescence. Applied Physics Letters. 05 July 1999, Vol. 75, No. 1, pp. 4-6, the whole article.	15-22 ----- 1-14
X ----- Y	US 5,439,794 A (BARTON) 08 August 1995 (08.08.95), Figures 1 and 6A-7F, column 4, line 40 to c. 5, l. 25, c. 10, l. 3 to c. 11, l. 41 and Table 2.	16-20 ----- 11, 12 and 23
X ----- Y	US 5,703,436 A (FORREST et al) 30 December 1997 (30.12.97), Figures 7, 8A-8E and 10, column 7, lines 29-48, c. 8, l. 66 to c. 9, l. 27, c. 9, l. 62 to c. 10, l. 24 and c. 10, l. 55-65.	1, 4, 6, 9-11, 13, 15-17 and 19 2, 3, 5, 7, 8, 12, 14, 18 and 20-23

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

15 FEBRUARY 2001

Date of mailing of the international search report

13 MAR 2001

Name and mailing address of the ISA/US  
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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/32511

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,840,897 A (KIRLIN et al) 24 November 1998 (24.11.98), column 3, line 19 to c. 4, l. 34, c. 6, l. 22 and Table 1.	16

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/32511

**A. CLASSIFICATION OF SUBJECT MATTER:**  
IPC (7):

H05B 33/14; C07D 213/02, 215/00, 231/12, 263/57, 277/66, 333/50, 409/04, 417/04

**A. CLASSIFICATION OF SUBJECT MATTER:**  
US CL :

428/690, 917; 313/504; 252/301.26, 301.28, 301.31, 301.32; 546/10, 101, 280.4; 548/108, 152, 237, 377.1; 549/3, 49, 59, 283

**B. FIELDS SEARCHED**  
Minimum documentation searched  
Classification System: U.S.

428/690, 704, 917; 313/502, 504, 506; 252/301.26, 301.28, 301.31, 301.32; 546/2, 10, 101, 280.4; 548/101, 108, 152, 156, 237, 377.1; 549/3, 49, 59, 283

**B. FIELDS SEARCHED**  
Electronic data bases consulted (Name of data base and where practicable terms used):

**EAST/USPAT**

search terms: octahedral, metal, metallic, chelat\$3, complex\$5, coordination, transition, iridium, phosphor, phosphores\$5, electrolumines\$5, electro lumines\$5, fluores\$5, lumines\$5, light, emit\$4, emiss\$4